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10/056,576	01/25/2002	Johnny M. Matta	10745/032	4687

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EXAMINER	
DYKE, KERRI M	

ART UNIT	PAPER NUMBER
2667	

DATE MAILED: 10/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/056,576	MATTA ET AL.
	Examiner	Art Unit
	Kerri M. Dyke	2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 January 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-53* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/26/2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-8, 10-19, and 21-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Lai et al. in *Measuring Link Bandwidths Using a Deterministic Model of Packet Delay* published in August 2000 and provided by the applicant on the IDS statement.

3. In regards to claim 1, Lai et al. discloses a method of estimating QoS in an IP network comprising the steps of generating at least a first and second probing packet with an access router from at least one access point; sending said first and second probing packets from said at least one access point over a fixed core network having a plurality of routers to a correspondent access router and then back to said at least one access router; sending at least one collector packet to follow said first and second probing packets to gather at least one predetermined QoS parameter from said routers after said first and second probing packets leave said routers; and processing said at least one QoS parameter with said at least one access router to determine a level of QoS experienced by said at least one access router. Section 4 of Lai et al. describes this technique in detail. The first probing packet is sent during the first or sigma phase. The second probing packet is send during the second or tailgating phase. The tailgating packet is the collector packet, which gathers information that is used to calculate bandwidth, which is a QoS parameter.

4. In regards to claim 2, Lai et al. discloses the method of claim 1, wherein said at least one collector packet comprises a forward collector packet for gathering said at least one QoS parameter from said routers while said first and second probing packets are traveling from said at least one access router to said correspondent access router. Section 4.1.3 discloses a technique for round trip measurements, which indicates the tailgating packet is inherently capable of being a forward collector packet.

5. In regards to claim 3, Lai et al. discloses the method of claim 1, wherein said at least one collector packet comprises a reverse collector packet for gathering said at least one QoS parameter from said routers while said first and second probing packets are traveling from said correspondent access router to said at least one access router. Section 4.1.3 discloses a technique for round trip measurements, which indicates the tailgating packet is inherently capable of being a reverse collector packet.

6. In regards to claims 4-8 and 10-12, Lai et al. discloses the method of claim 1 and each of the additional limitations in claims 4-8 and 10-12 in section 4. Packet jitter is also known as inter-packet transmission time, which is discussed specifically in section 4.1.1.

7. In regards to claim 13, Lai et al. discloses the method of claim 1, further comprising the step of avoiding the gathering of said at least one QoS parameters by said collector packets for each router already visited by a first and second probing packet from another access router (section 2.2).

8. Claim 14 incorporates the limitations of claims 1-3 and is rejected upon the same basis.

9. Claims 15-19 and 21-25 correspond to claims 4-8 and 10-13 and are rejected upon the same basis.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lai et al. in view of Gallagher et al. (US 6,704,304).

12. In regards to claims 9 and 20, Lai et al. discloses the methods of claims 1 and 14, but not wherein the probing packets are formed having similar characteristics as voice traffic packets.

Gallagher et al. discloses using voice packets in column 2 lines 25-26.

It would have been obvious to one of ordinary skill in the art to measure the QoS, as taught by Lai et al. using voice packets as taught by Gallagher et al. because degradation of QoS in voice calls is unacceptable, as taught by Gallagher et al. in column 1 lines 26-31.

13. Claims 26-36, 38-47, and 49-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lai et al. in view of Wu et al. (*Intelligent Handoff for Mobile Wireless Internet*).

14. Claim 26 includes all the limitations of claim 1. Those limitations are rejected upon the same basis. Claim 26 also includes the limitation of processing said at least one QoS parameter with said access routers to make said handoff trigger decision, which is not disclosed by Lai et al.

Wu et al. discloses a handoff architecture based upon QoS measurements in section 5.

It would have been obvious to one of ordinary skill in the art to trigger a handoff, as taught by Wu et al. based upon the QoS measurements taught by Lai et al. because reliable and efficient service is expected as taught by Wu et al. in section 6.

15. In regards to claim 27, Lai et al. and Wu et al. disclose the method of claim 26, further comprising the step of considering at least one layer two QoS parameter from said access point to said remote terminal when making said handoff trigger decision. Wu et al. discloses using layer two QoS parameters in section 5.

16. In regards to claim 28, Lai et al. and Wu et al. disclose the method of claim 27, wherein each said access point not having a signal strength for a wireless hop above an acceptable predetermined threshold is removed from consideration when making said handoff trigger decision. Wu et al. discloses the handoff parameters in section 5.1 and the handoff conditions in section 5.1.1.

17. In regards to claim 29, Lai et al. and Wu et al. disclose the method of claim 27, wherein said layer two QOS parameters may be selected from a group of parameters consisting of Bit Error Rate (BER), Frame Error Rate (FER), Signal-to-Noise Ratio (SNR), Carrier-to-Interference ratio (C/I), received wireless signal power, throughput in bits/sec (average, peak minimum), goodput in bits/sec (average, peak minimum), frame loss ratio, frame latency, and frame latency variation. Wu et al. discloses using FER to trigger a handoff in section 5.1.1.

18. Claims 30-36 and 38-41 correspond to claims 2-8 and 10-13 and are rejected upon the same basis.

19. Claim 42 discloses the same limitations as claim 26 and is rejected upon the same basis.

20. Claims 43-47 and 49-53 correspond to claims 4-8 and 10-13 and are rejected upon the same basis.

21. Claims 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lai et al. in view of Wu et al. (*Intelligent Handoff for Mobile Wireless Internet*), further in view of Gallagher et al. (US 6,704,304).

22. In regards to claims 37 and 48, Lai et al. and Wu et al. disclose the methods of claims 26 and 42, but not wherein the probing packets are formed having similar characteristics as voice traffic packets.

Gallagher et al. discloses using voice packets in column 2 lines 25-26.

It would have been obvious to one of ordinary skill in the art to measure the QoS, as taught by Wu et al. and Lai et al. using voice packets as taught by Gallagher et al. because degradation of QoS in voice calls is unacceptable, as taught by Gallagher et al. in column 1 lines 26-31.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Goldshtein et al. (US 6,925,063), Yaakov (6,748,433), Feinberg (US 6,798,745), and Chen et al. (US 5,793,976) disclose methods for measuring QoS values. The measured values are used to make network management decisions within telecommunications networks.

b. Fitzgerald et al. (US 6,466,548) discloses a method for measuring QoS in each hop of a network.

c. Aukia et al. (US 6,594,268) discloses re-routing data flows based upon measured QoS parameters.

d. Li et al. (*Towards Integrated Runtime Solutions in QoS-aware Middleware*), discloses software for measuring and acting upon QoS measurements.

e. Hac et al. (*A two-phase combined QoS-based handoff scheme in a wireless ATM network*) discloses a method of measuring QoS and using the outcome to trigger handoffs.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kerri M. Dyke whose telephone number is (571) 272-0542. The examiner can normally be reached on Monday through Friday, 8:00 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kmd

CHI PHAM
SUPERVISORY PATENT EXAMIN
TECHNOLOGY CENTER 2[illegible] 10/26/05